

# SERGE BABAYAN

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## Education

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### University of Waterloo

Sep '14 - Apr '19

Pursuing an Honors Bachelor of Applied Science in Mechatronics Engineering. **GPA:** 3.75/4

## Relevant Experience

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### Mechatronics Engineer

#### Multimatic Inc.

Sep '17 - Dec '17

- Developed hardware interface and embedded control software for an active car spoiler, implementing PID motor control algorithms and input from hall effect encoders running on a PIC based automotive ECU
- Upgraded software and hardware for an encoder tester of production line motors
- Created Android application for wireless configuration of embedded devices via Bluetooth Serial
- Supported team with meticulous wiring, soldering, testing and assembly of various automotive components and National Instrument based electrical control panels

### Embedded Developer

#### Eleven-X Inc.

Jan '17 - Apr '17

- Brought up and performed RF and power analysis for a variety of ARM-based LoRaWAN modules
- Developed and integrated STSafe secure chip C++ driver for STM32-based MCU
- Implemented backend for web-based portal for retrieving and displaying real-time data from IOT devices

### Full-Stack Developer

#### Textnow Inc.

May '16 - Apr '16

- Worked in an agile environment, developing server-side billing features for over 50 million users using PHP, Ruby and MySQL

## Extracurriculars

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### Team Lead

#### Waterloo Aerial Robotics Group

Sep '14 - Sep '17

- Lead of student design team at University of Waterloo that specializes in autonomous flying vehicles, handling team logistics, recruitment, sponsorships and finances
- Managed all software and hardware projects, including the embedded autopilot and Groundstation

## Relevant Projects

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### Developer, Lead

#### Drone Autopilot

Oct '16 - Sept '17

- Extensive embedded development experience with safety-critical real-time systems from writing communication interfaces and sensor drivers
- Implemented reliable Inter-Process Communication for PIC-based dual-chip autopilot via Direct Memory Access (DMA)
- Integrated and developed unit tests using Ceedling framework for optimal reliability

### Developer, Lead

#### Drone Groundstation

Oct '16 - Sept '17

- Planned, designed and developed cross-platform ground station for real time communication with unmanned aircraft during flight. Based on Node.js and Electron

**Technologies:** *Linux CLI, Git, Sensor Interfacing (SPI, UART, DMA, CAN), FPGA, RF, Android, Web, MySQL*

**Languages:** *C, C++, Javascript, Java, PHP, Python, Ruby, Bash*